

A New *Trithyreus* from a Desert Oasis in Southern California

(Arachnida: Schizomida: Schizomidae)

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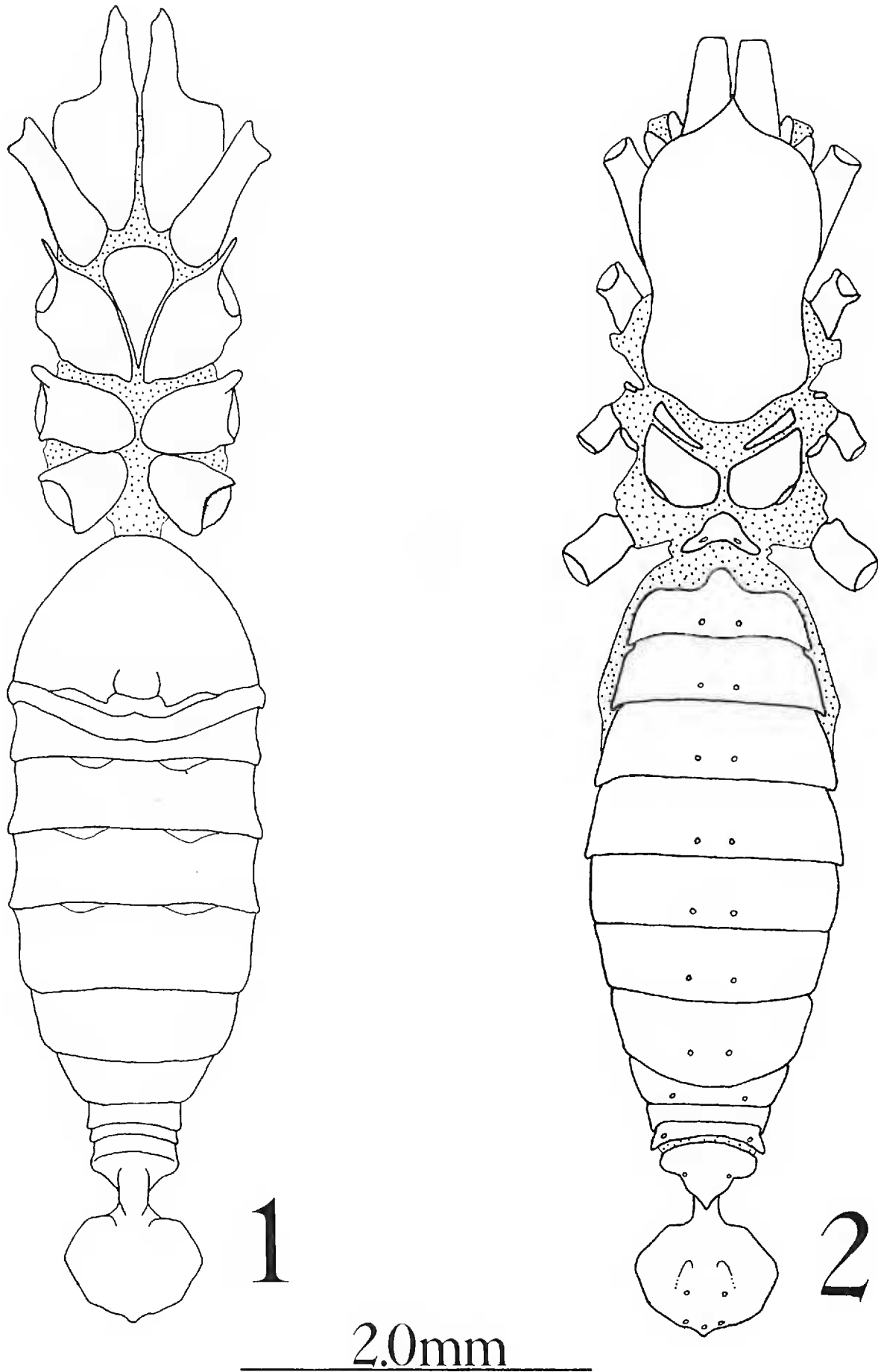
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Three species of *Trithyreus* have been collected from a number of sites in California. *Trithyreus belkini* McDonald and Hogue (1957) and *T. pentapeltis* (Cook) (1899) have been found in widespread localities, whereas *T. borregoensis* Briggs and Hom (1966) is known only from Borrego Palm Canyon, a well known desert oasis. This paper describes another *Trithyreus* from a very similar isolated desert oasis at 49 Palms in Joshua Tree National Monument, about 27 miles northeast of Indio, California.

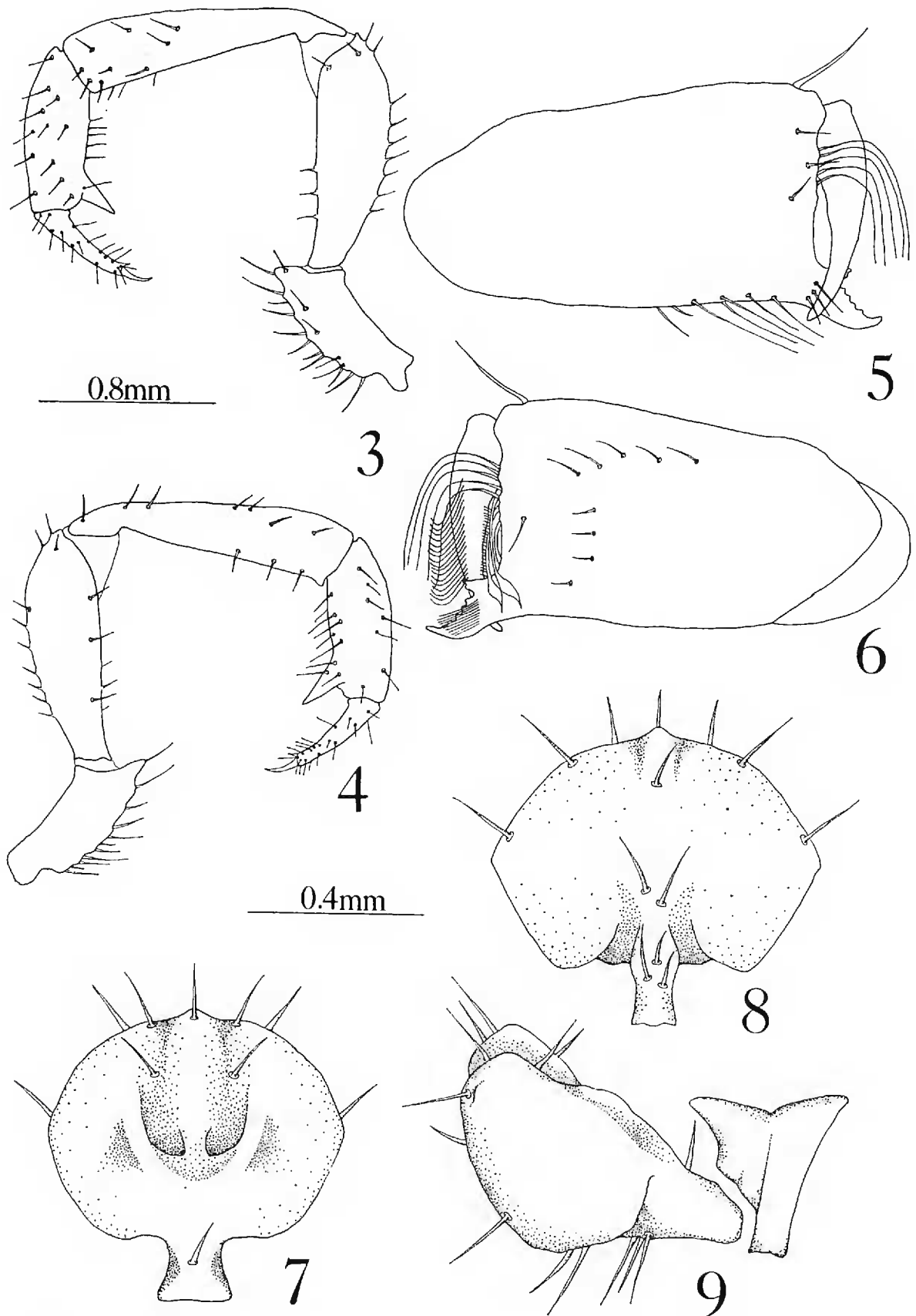
The order Schizomida is represented by seven species in two genera in the United States. Integration of Briggs and Hom's key (1966), with a modified version from Gertsch (1940) produces a key to the males of the United States species and the females of *Schizomus floridanus* Muma (1967) in which the male is unknown. It is assumed to be parthenogenetic.

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|--|---------------------------------------|
| 1. Third cephalothoracic tergum (metapeltidium) entire | <i>Schizomus</i> 2 |
| Third cephalothoracic tergum divided longitudinally by suture or membrane
to form two lateral plates | <i>Trithyreus</i> 3 |
| 2. Trochanter of female pedipalp strongly produced distally, one-half diameter
of femoral socket. Males unknown | <i>S. floridanus</i> Muma |
| Trochanter of pedipalp vaguely produced distally not more than one-fourth
diameter of femoral socket | <i>S. mulaiki</i> Gertsch |
| 3. Flagellum long, subtriangular | <i>T. pentapeltis</i> (Cook) |
| Flagellum club shaped | 4 |
| 4. Flagellum trilobed, median lobe projecting dorsad | <i>T. wessoni</i> Chamberlin |
| Flagellum not trilobed as above | 5 |
| 5. Flagellum pentagonal; no mesal spur on tibia of pedipalp | |
| | <i>T. borregoensis</i> Briggs and Hom |
| Flagellum a rotundate hexagon; mesal spur located apically on tibia of pedi-
palp | 6 |
| 6. Dorsal surface of flagellum convex at center | <i>T. belkini</i> McDonald and Hogue |
| Dorsal surface of flagellum concave at center | <i>T. joshuensis</i> Rowland, n. sp. |

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FIGS. 1-2. Male holotype, *Trithyreus joshuensis* Rowland, new species. FIG. 1. Ventral aspect, legs, pedipalps and setal pits omitted. FIG. 2. Dorsal aspect, legs and pedipalps omitted, setal pits shown.



FIGS. 3-9. Male holotype, *Trithyreus joshuensis* Rowland, new species. FIG. 3. Lateral aspect of pedipalp. FIG. 4. Mesal aspect of pedipalp. FIG. 5. Lateral aspect of chelicera. FIG. 6. Mesal aspect of chelicera. FIG. 7. Dorsal aspect of flagellum. FIG. 8. Ventral aspect of flagellum. FIG. 9. Lateral aspect of flagellum and 12th abdominal segment. 0.8 mm scale refers to Figs. 3-4. 0.4 mm scale refers to Figs. 5-9.

Trithyreus joshuensis Rowland, new species

This description is based on the holotype male (chelicerae, pedipalps and first pair of legs detached), the allotype, and four paratypes (two males and two females) all in 80% ethyl alcohol.

MALE.—Total length (from anterior margin of first cheliceral segment to end of flagellum), 6.27–6.92 mm.

Cephalothorax.—Carapace (propeltidium, first cephalothoracic tergum) twice as long as wide, strongly convex, lateral margins nearly vertical, produced anteromesally as a sharp, conical process; eye spots vaguely distinct as elongate, oval, pale areas on anterolateral surface of carapace; mesopeltidia (second pair of cephalothoracic tergites) acutely triangular, gently curved, pointing nearly diagonally toward midline; metapeltidium (third cephalothoracic tergum) divided medially into two plates, medial margin of metapeltidial plates shorter than curving lateral margin, anterior margin nearly parallel with posterior margin of mesopeltidia, posterolateral angle of metapeltidial plates in close approximation with small, narrowly curved plate; anterior sternum triangular, pointing caudad, apex extending nearly to caudal limit of coxae II, anterolateral angles curved; posterior sternum (metasternum) indistinct.

Abdomen.—First abdominal tergum located equally between second abdominal tergum and metapeltidium, nearly chevron shaped; segments II–IX with pleural membrane dividing terga and sterna; terga X–XII fused with sterna X–XII; segment XII with posterodorsal cone projecting horizontally over base of flagellum; lung books vaguely visible under second abdominal sternum; terga III–VII bearing slightly darkened apodemes of dorsoventral muscles, dorsoventral muscle insertions appearing as pale areas on sterna V–VII.

Flagellum.—Bulbous, horizontally compressed bearing 16 setae; dorsal surface concave medially with a pair of depressions giving rise medially to elevation culminating distally in small cone; transversely convex ventrally.

Chelicerae.—Lateral aspect of basal segment bearing three setae in vertical group below large dorsal seta, vertical group of five long, feathered setae flanking movable finger (second cheliceral segment), group of three shorter setae arranged basally on fixed digit, horizontal group of seven setae arising on or near ventral margin; mesal surface of basal segment bearing group of five setae arranged horizontally, lower group of four shorter setae arranged vertically, single seta directly below large dorsal seta, movable finger flanked by another vertical group of five long, feathered setae as on lateral surface, three large, elongate, distally enlarged setae originating just below previous group, fixed digit bearing 10 closely situated feathered setae; movable finger destitute of setae laterally, mesal aspect bearing vertical row of 16 long, feathered, distally curled setae near outer margin, another vertical row of 22 short setae or teeth near inner surface.

Pedipalps.—Trochanter produced distally beyond femoral socket; femur and patella narrow proximally, expanding distally; tibia with mesal, subapical spur; tarsus-basitarsus with small spur just above claw; length of segments given below.

Legs.—First leg antenniform, terminal segment without tarsal claw; coxa of second leg with anterolateral spur; third leg shorter than others; femur of fourth leg greatly expanded and laterally compressed; legs II–IV with three tarsal claws; length of segments given below.

	Pedipalp mm	I mm	II mm	III mm	IV mm
Coxa	0.66–0.80	0.63–0.75	0.53–0.56	0.41–0.48	0.39–0.47
Trochanter	0.47–0.64	0.37–0.41	0.21–0.26	0.25–0.31	0.42–0.45
Femur	0.65–1.06	1.52–1.72	1.02–1.17	0.95–1.05	1.46–1.56
Patella	0.77–1.29	–	0.59–0.64	0.41–0.50	0.64–0.69
Tibia	0.55–0.74	1.98–2.16	0.69–0.76	0.59–0.66	1.06–1.15
Basitarsus		1.50–1.62	0.58–0.67	0.64–0.76	0.94–1.02
	0.42–0.47				
Tarsus		1.13–1.27	0.45–0.46	0.47–0.49	0.55–0.59
Total	3.52–5.00	7.13–7.82	4.07–4.49	3.72–4.19	5.46–5.90

FEMALE.—Total length (from anterior margin of first cheliceral segment to end of flagellum), 6.52–6.85 mm.

Female allotype and paratypes differ from description of male holotype and paratypes as follows:

Pedipalps.—Femur, patella and tibia much shorter than in male; femur and patella not as narrow proximally; tibia without subapical spur; length of segments given below.

Legs.—First leg about one-tenth shorter than in male; length of segments given below.

Abdomen.—Segment XII not bearing the posterolateral cone projecting horizontally over flagellum.

Flagellum.—Four segmented, elongate cylindrical, terminal segment longer than previous three.

	Pedipalp mm	I mm	II mm	III mm	IV mm
Coxa	0.67–0.85	0.58–0.69	0.52–0.55	0.43–0.49	0.40–0.49
Trochanter	0.35–0.55	0.35–0.39	0.23–0.26	0.25–0.30	0.42–0.45
Femur	0.44–0.59	1.34–1.53	1.00–1.10	0.90–1.03	1.32–1.52
Patella	0.69–0.81	–	0.52–0.61	0.40–0.46	0.59–0.70
Tibia	0.53–0.63	1.60–1.86	0.64–0.75	0.54–0.63	0.98–1.09
Basitarsus		1.22–1.45	0.56–0.65	0.62–0.71	0.85–0.95
	0.34–0.36				
Tarsus		1.03–1.12	0.44–0.46	0.48–0.49	0.53–0.55
Total	3.02–3.79	6.12–7.04	3.91–4.37	3.62–4.07	5.09–5.75

Holotype male and allotype, 49 PALMS, JOSHUA TREE NATIONAL MONUMENT, SAN BERNARDINO COUNTY, CALIFORNIA, 20 February 1970 (J. M. Rowland and D. Harris). Paratype male and female at type locality, 22 February 1970 (J. M. Rowland and C. S. Rowland). Paratype male and female at type locality, 30 December 1970 (J. M. Rowland and P. J. Brashier). Collected in leaf litter. All types are deposited in the American Museum of Natural History, New York.

The descriptions of *Trithyreus belkini* and *T. borregoensis* incorporate

inaccuracies which the authors have permitted me to rectify here. The third thoracic tergum described by them is actually the first abdominal tergum. Other members of the order show a greater proximity of this tergum to the second abdominal tergum (Hansen and Sorensen, 1905). Their description of the abdominal segments needs revision from 11 segments to 12 segments and all references to abdominal segments 1–11 should be changed to segments 2–12. In their respective descriptions of the legs they have included a measurement of the patella of the first leg, which, according to most current authorities, does not exist (Gertsch, 1940). The patella they have described is recognized as the tibia, the tibia described is recognized as the basitarsus, the basitarsus and tarsus described are recognized as the tarsus.

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